

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 04 August 2009 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al in combination with Holubec (4,162,985) or in combination with Matsuno et al (6,191,330).

Applicants' arguments filed 04 August 2009 have been fully considered but they are not persuasive. As previously set forth, Yoshida et al ["Yoshida"] disclose derivatives of bicyclo[2.2.1]heptane useful as traction drive fluids, represented by formula (VII) in column 2, which have a high traction coefficient under high temperatures and an excellent viscosity characteristic under low temperatures. Yoshida teaches that the traction drive fluids have the following properties: (a) molecular weight of 210 or larger, (b) kinematic viscosity at 40°C of 10-25 mm²/s, (c) viscosity index of 60 or higher, (d) pour point of -40°C or lower, (e) density at

20°C of 0.93 g/cm³ or higher, and (f) traction coefficient at 140°C of 90% or higher of the coefficient of 2,4-dicyclohexyl-2-methylpentane. See column 3, lines 1-21. Yoshida also teaches that the traction drive fluids include the hydrogenated dimers of bicyclo [3,2,1] octane ring compounds, bicyclo [3,3,0] octane ring compounds and bicyclo[2,2,2] octane ring compounds. See column 8, lines 58-64 and column 10, lines 17-58. The examiner maintains the position that the traction drive fluids of Yoshida meet the limitations of base oil component (A) of the claims which has been amended to specific base oils for traction drives including the above recited base oils. Applicants' invention differs from Yoshida by adding component (B), a hydrocarbon polymer having a weight average molecular weight in the range of 8,000 to 40,000 which comprises as a constituent at least 10 mole % of a monomer bearing a cyclic structure and hydrogenated products thereof, which acts as a viscosity index improver to the traction drive fluid. However, Yoshida allows for the addition of conventional additives to the traction drive fluid including viscosity index improvers. See column 11, lines 45-50. Holubec is added to teach that hydrogenated interpolymers of at least one monovinyl arene and at least one C₄-C₆ conjugated diene or at least one C₂-C₆ alpha-olefin may be used as additives in lubricating oil compositions. The interpolymers have a number average molecular weight of about 750 to about 10,000. Suitable monovinyl arenes include styrene, methyl-styrene and vinyl naphthalene. Suitable C₂-C₆ alpha-olefins include ethylene, propylene, n-butene-1, n-hexene, etc. See col. 4, line 37 to column 5, line 25. Thus the examiner is of the position that Holubec meets the limitation of component (B) which has a molecular weight overlapping this range. Matsuno et al ["Matsuno"] is added to teach that viscosity index improvers for traction drive fluids include polyalkylstyrenes. See column 12, lines 13-19. The examiner is of the position that Matsuno

meets the limitation of component (B) of the claims which may be a polymer of a monomer bearing a cyclic structure.

Having the prior art references before the inventors at the time the invention was made it would have been obvious to have added an additional polymeric viscosity modifier such as the styrene copolymer component disclosed in Holubec or the polyalkylstyrene viscosity index improver disclosed in Matsuno to the traction drive fluid of Yoshida. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in Yoshida allowing for the addition of other additives to the traction drive fluid including viscosity index improvers.

In response applicants argued that the obviousness rejection should be withdrawn on the basis of a superior and unexpected result. The results presented in the Declaration under 37 C.F.R. 1.132 and in the instant specification have been carefully considered; however, the examiner is of the position that the data fails to rebut the established *prima facie* case of obviousness for several reasons. First, all of the claims at issue are drawn to a traction drive fluid composition and NOT to a method of using the composition in a transmission such as a continuously variable transmission (CVT). Thus the claimed compositions are not required to be used in any particular environment such as in a CVT where there are allegedly superior results in the property of traction coefficient. Second, in reference to Matsuno, applicants argue that the

addition of a viscosity index improver to the traction drive fluid component (A) results in the lowering of the traction coefficient by about 7% (0.085 to 0.079) at most with PMA (polymethacrylate) as component D, and results in the lowering of the traction coefficient by about 1% (0.085 to 0.084) with PIB and OCP as component D. In contrast, applicants argue, the addition of component (B) to the base oil (A) of claim 1 does not lower the traction coefficient of the base oil (A), and in some cases, actually raises the traction coefficient. The results set forth in the Declaration show that the traction coefficient @ 140°C remained at 0.077 by the addition of polymers I, II, III, IV in Table 1-1; and the traction coefficient @ 140°C remained at 0.070 by the addition of polymers I, II, III, IV in Table 1-2. However, the examiner is not convinced that the results presented are unexpected to the skilled worker in the art which is what is needed to rebut the established *prima facie* case. The examiner is of the position that of course completely different viscosity index improvers are going to affect the traction coefficient of the traction drive fluid represented by component (A). The examiner is of the position that the approximately 1% difference reported in Matsuno for two different viscosity index improvers versus the 0% difference for the claimed viscosity index improvers in the property of traction coefficient does not rise to the level of superior and unexpected results as argued.

Claim Rejections - 35 USC § 103

Claims 1-10 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al (5,283,384) in combination with Holubec (4,162,985) or in combination with Matsuno et al (6,191,330).

Applicants' arguments filed 04 August 2009 have been fully considered but they are not persuasive. As previously set forth, Abe et al ["Abe"] disclose a traction drive fluid composition comprising a hydrocarbon having a bicyclo octane skeleton such as bicyclo[3,2,1] octane, bicyclo [2,2,2] octane and bicyclo[3,3,0] octane. Abe teaches that the traction drive fluids may contain a hydrogenated dimer or co-dimer of the bicyclo octanes. See column 5, lines 52-59. The examiner maintains the position that the traction drive fluids of Abe meet the limitations of base oil component (A) of the claims which has been amended to specific base oils for traction drives including the above recited base oils. Applicants' invention differs from Abe by adding component (B), a hydrocarbon polymer having a weight average molecular weight in the range of 8,000 to 40,000 which comprises as a constituent at least 10 mole % of a monomer bearing a cyclic structure and hydrogenated products thereof, which acts as a viscosity index improver to the traction drive fluid. However, Abe allows for the addition of conventional additives to the traction drive fluid including viscosity index improvers. See column 11, lines 22-58. Holubec is added to teach that hydrogenated interpolymers of at least one monovinyl arene and at least one C₄-C₆ conjugated diene or at least one C₂-C₆ alpha-olefin may be used as additives in lubricating oil compositions. The interpolymers have a number average molecular weight of about 750 to about 10,000. Suitable monovinyl arenes include styrene, methyl-styrene and vinyl naphthalene. Suitable C₂-C₆ alpha-olefins include ethylene, propylene, n-butene-1, n-hexene, etc. See column 4, line 37 to column 5, line 25. Thus the examiner is of the position that Holubec meets the limitation of component (B) which has a molecular weight overlapping this range. Matsuno et al ["Matsuno"] is added to teach that viscosity index improvers for traction drive fluids include polyalkylstyrenes. See column 12, lines 13-19. The examiner is of the position that

Matsuno meets the limitation of component (B) of the claims which may be a polymer of a monomer bearing a cyclic structure.

Having the prior art references before the inventors at the time the invention was made it would have been obvious to have added an additional polymeric viscosity modifier such as the styrene copolymer component disclosed in Holubec or the polyalkylstyrene viscosity index improver disclosed in Matsuno to the traction drive fluid of Abe. As set forth above, the motivation to make the combination relied on by the examiner is the disclosure in Abe allowing for the addition of other additives to the traction drive fluid including hydrocarbon oils and viscosity index improvers.

Applicants argument that the obviousness rejection should be withdrawn on the basis of superior and unexpected results has been fully addressed above.

Claim Rejections - 35 USC § 103

Claims 1-6 and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murai et al (4,889,649) in combination with Holubec (4,162,985) or in combination with Matsuno et al (6,191,330).

Applicants' arguments filed 04 August 2009 have been fully considered but they are not persuasive. As previously set forth, Murai et al ["Murai"] disclose a traction drive fluid containing, as a base stock, a composition composed of 40 to 80 weight % of a 2,4-dicyclohexyl-2-methylpentane and 20 to 60 weight % of a mixture of polycyclohexylalkane and a perhydroindane derivative. The examiner maintains the position that the traction drive fluids of Murai meet the limitations of base oil component (A) of the claims which has been amended to

specific base oils for traction drives including the above recited base oils. Applicants' open-ended claim language "comprising" allows for the addition of other additives to the composition including the mixture of polycyclohexylalkane and a perhydroindane derivative disclosed in Murai. Applicants' invention differs from Murai by adding component (B), a hydrocarbon polymer having a weight average molecular weight in the range of 8,000 to 40,000 which comprises as a constituent at least 10 mole % of a monomer bearing a cyclic structure and hydrogenated products thereof, which acts as a viscosity index improver to the traction drive fluid. However, Murai allows for the addition of conventional additives to the traction drive fluid including polyisobutylene and its hydrogenated product as viscosity index improvers. See column 5, lines 18-35. Holubec is added to teach that hydrogenated interpolymers of at least one monovinyl arene and at least one C₄-C₆ conjugated diene or at least one C₂-C₆ alpha-olefin may be used as additives in lubricating oil compositions. The interpolymers have a number average molecular weight of about 750 to about 10,000. Suitable monovinyl arenes include styrene, methyl-styrene and vinyl naphthalene. Suitable C₂-C₆ alpha-olefins include ethylene, propylene, n-butene-1, n-hexene, etc. See column 4, line 37 to column 5, line 25. Thus the examiner is of the position that Holubec meets the limitation of component (B) which has a molecular weight overlapping this range. Matsuno et al ["Matsuno"] is added to teach that viscosity index improvers for traction drive fluids include polyalkylstyrenes. See column 12, lines 13-19. The examiner is of the position that Matsuno meets the limitation of component (B) of the claims which may be a polymer of a monomer bearing a cyclic structure.

Having the prior art references before the inventors at the time the invention was made it would have been obvious to have added an additional polymeric viscosity modifier such as the

styrene copolymer component disclosed in Holubec or the polyalkylstyrene viscosity index improver disclosed in Matsuno to the traction drive fluid of Murai. As set forth above, the motivation to make the combination relied on by the examiner is the disclosure in Murai allowing for the addition of other additives to the traction drive fluid including hydrocarbon oils and viscosity index improvers.

Applicants argument that the obviousness rejection should be withdrawn on the basis of superior and unexpected results has been fully addressed above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Ellen M McAvoy/
Primary Examiner
Art Unit 1797

EMcAvoy
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